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ABSTRACT

This publication contains curriculum material and suggestions for teaching disease prevention and control in grades four, five and six. Objectives of this program include; 1) an understanding of the basic differences between communicable and non-communicable disease syndromes, and a familiarity with representative diseases from each of these groups; 2) gaining a perspective on man's historical efforts to understand and cope with disease, and appreciate how developments of the past are related to present efforts; and 3) be familiar with the mechanisms of immunity, and take advantage of those immunizations recommended for the prevention of disease. The publication format is intended to provide teachers with a basic content in the first column; a listing of the major understandings and fundamental concepts which children may achieve, in the second column; and information specifically designed for classroom teachers which should provide them with resource materials, teaching aids, and supplementary information in the third and fourth columns. (KJ)

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PROTOTYPE
CURRICULUM MATERIALS
FOR THE ELEMENTARY
AND SECONDARY GRADES



HEALTH

GRADES 4-6

CG005 028

STRAND I PHYSICAL HEALTH

DISEASE PREVENTION AND CONTROL

SPECIAL EDITION FOR EVALUATION AND DISCUSSION

THE UNIVERSITY OF THE STATE OF NEW YORK/THE STATE EDUCATION DEPARTMENT
BUREAU OF ELEMENTARY CURRICULUM DEVELOPMENT/ALBANY, NEW YORK 12224/1969

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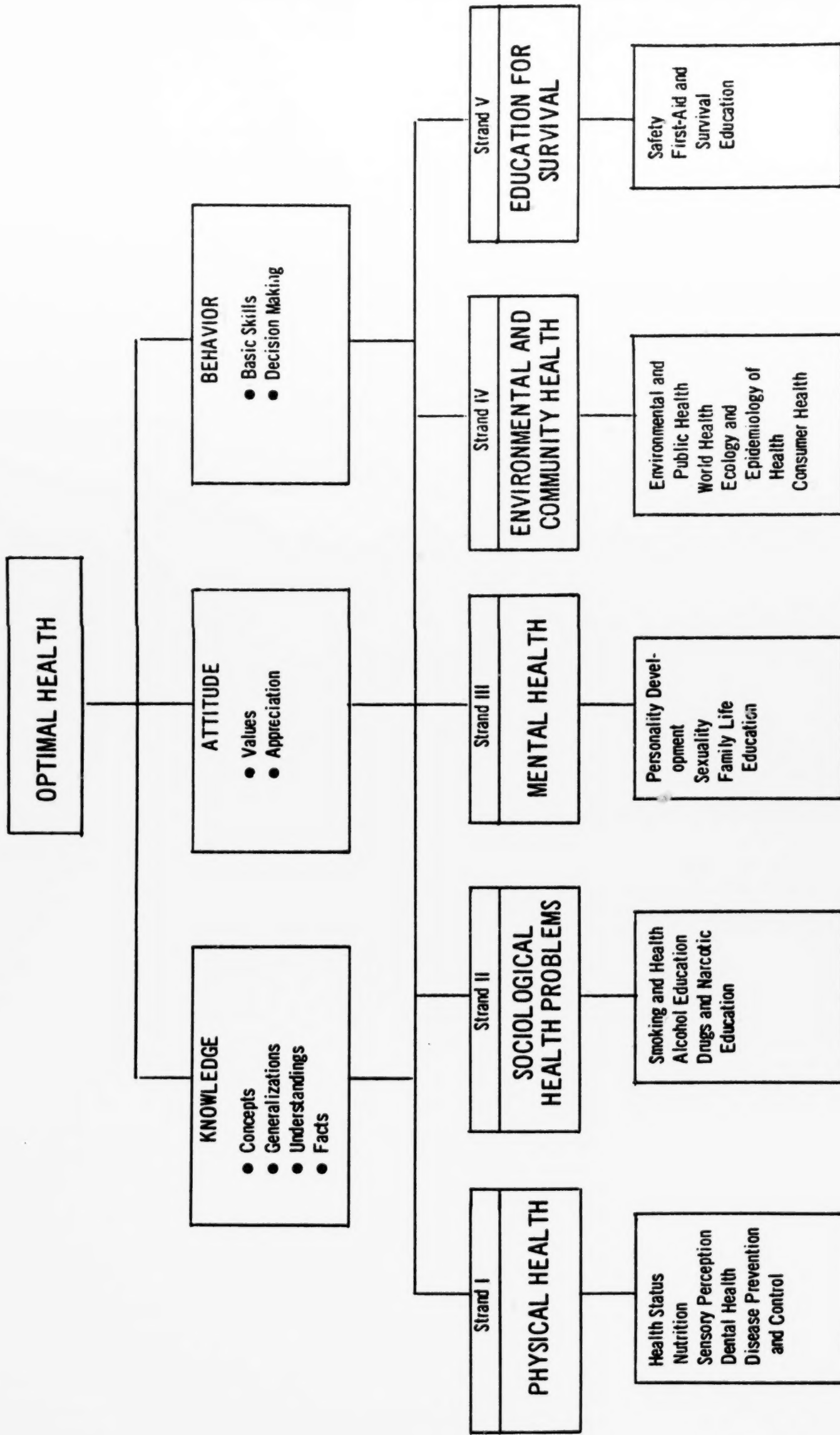
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HEALTH CURRICULUM MATERIALS
Grades 4, 5, 6

STRAND I, PHYSICAL HEALTH
Disease Prevention and Control

The University of the State of New York/The State Education Department
Bureau of Elementary Curriculum Development/Albany 12224



STRAND I

PHYSICAL HEALTH

Disease Prevention and Control

Grades 4, 5, and 6

OVERVIEW

Since ancient times, men have attempted to understand diseases and their relationship to human efficiency. Concern with specific diseases has changed dramatically through the years, but contemporary health-scientists continue their relentless efforts to discover new knowledge necessary for the prevention and control of diseases that influence man's well-being. Present efforts to understand the ecological implications and the epidemiological significance of diseases have added new dimensions to man's understanding of the disease process.

STRAND I

PHYSICAL HEALTH

Disease Prevention and Control

Grades 4, 5, and 6

OUTCOMES

PUPILS IN GRADES 4, 5, AND 6 SHOULD:

- understand the basic differences between communicable and non-communicable disease syndromes and be familiar with representative diseases from each of these groups.
- gain perspective on man's historical efforts to understand and cope with disease, and appreciate how developments of the past are related to present efforts.
- be familiar with the mechanisms of immunity and take advantage of those immunizations recommended for the prevention of disease.
- comprehend the significance of disease prevention and control and work to protect themselves, their families, and society from all forms of disease.

SUPPLEMENTARY INFORMATION FOR TEACHERS

SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES

Discuss the following questions:

1. What is a disease?
2. What are man's accomplishments in combating disease in the past 50 years?
3. What were some early ideas about the nature of disease? What it was? What caused it?

Diseases which are transmitted from person to person are called communicable diseases. Sometimes they are referred to as contagious diseases. A common characteristic of all of these diseases is that they are all caused by some kind of infectious organism.

Review transmission of communicable diseases, K-3.

Show movie: "Health heroes: the battle against disease." Discuss the significance of the contributions of a single person to the solution to major social problems.

Have pupils go to the library and research other "Health heroes" or significant developments.

Appoint two committees of 4 pupils each.

1. Have one committee develop a bibliography, with help from the

MAJOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS

Disease takes many forms and may affect any part of the body

A disease is any unhealthy condition of a part or all of the body.

REFERENCE

I. The Nature of Disease

A. Kinds and types

SUPPLEMENTARY INFORMATION FOR TEACHERS

SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES

librarian, on each of the areas of disease that are being studied. (These can become the basis for a resource center and independent study for the pupil.)

2. Have the second committee consult with the school health educator, school nurse-teacher, and dental hygiene teacher to determine the kinds of learning aids that are available in this area. These also can become part of the learning center.

The development of an infectious disease depends on the interaction of three elements:

1. host
2. agent
3. environment

Review the three elements necessary for the occurrence of an infectious disease.

Develop a comparison table with the class, using the following headings:

1. Name of disease
2. Infecting agent
3. Kind of immunity possible
4. General nature of the disease
5. Remarks

Have pupils list two

MAJOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS

All communicable diseases are caused by infectious agents.

1. communicable diseases

REFERENCE

REFERENCE

MAJOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS

Communicable diseases are of many different kinds, but they are all capable of being transmitted from person to person.

2. noncommunicable diseases

Many diseases (e.g., degenerative diseases) which attack man cannot be transmitted from one person to another.

SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES

diseases for each causative agent and two diseases which are not communicable.

Show and discuss the movie: "Your health: disease and its control." Coronet Films.

Have pupils write a short essay on "Why some diseases cannot be passed on to other people."

Questions:

1. In what ways are noncommunicable diseases different from communicable?
2. Can some noncommunicable diseases be "caught" from someone who has it?
3. What are some examples of noncommunicable diseases?
4. How does the control of noncommunicable diseases differ from the communicable? How is it similar?

SUPPLEMENTARY INFORMATION FOR TEACHERS

Not all infectious diseases are communicable, for example: appendicitis. Broadly speaking, however, diseases which are not transmitted from person to person may be called noncommunicable diseases. These diseases include chronic and degenerative diseases. Diseases may be further subdivided into such categories as:

1. Deficiency diseases - due to a lack of essential nutrients (i.e. scurvy)
2. Hereditary - resulting from faulty genes (mongolism, color blindness, hemophilia)
3. Constitutional - due to a dysfunction of an organ or tissue (diabetes)
4. Traumatic diseases (fractures, burns)

SEE APPENDIX D

REFERENCE

- B. Etiological considerations

MAJOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS

There are many different causes of diseases.

SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES

Have pupils read and report on the following books:

1. *Dear little mumps child*
2. *Karen gets a fever*
3. *Michael gets the measles*
4. *Penny the medicine maker*
5. *Peter gets the chicken pox*

SUPPLEMENTARY INFORMATION FOR TEACHERS

Some causes of disease are specific, as in the case of infectious diseases, and some may be quite general, as in the case of some heart and circulatory diseases.

The most common kinds of infectious organisms are:

1. Bacteria
2. Fungi
3. Protozoa
4. Spirochetes
5. Viruses

(It is not necessary for pupils to learn or memorize all of these, but discussions of infectious diseases may be more meaningful if pupils are aware of the variety of organisms that may cause disease.)

Most microorganisms that cause disease are parasites, i.e., they live in or on other living things. Parasites make humans ill, and often interfere with human life processes.

Have a class committee:

1. obtain from the library all the books available on disease and its control.
2. obtain from the school health coordinator posters or other visual charts.
3. obtain from the audiovisual director slides, filmstrips and movies.

The above can be made into a display. Invite other pupils to see it.

REFERENCE

MAJOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS

Age, sex, and heredity sometimes influence an individual's susceptibility to disease.

SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES

Have a committee of pupils write, direct, produce and act in a play based on some great event in man's attempts to conquer disease.

SUPPLEMENTARY INFORMATION FOR TEACHERS

Degenerative diseases are diseases due to the destruction of body tissues. They are usually associated with old age, but may occur in the very young. Some of these diseases are due partly to heredity or aging. Some are the indirect results of infectious diseases or of poor personal hygiene. Examples of degenerative diseases would include some kinds of heart and circulatory disturbances, diabetes, and nephritis.

Some diseases are more prevalent among members of one sex than another. Diabetes is more common in women, for example.

Rather than directly inheriting diseases, individuals may inherit a predisposition to some diseases (e.g., diabetes).

II. History of Disease

A. Prehistoric times

Man has always tried to understand the cause of disease, as attested by:

1. Prehistoric "evil spirits" theory
2. Later religious

Have class develop a timeline and through library research include the key events to man's efforts to understand disease.

Appendix A represents a classroom chart which could be constructed of oaktag - covered with acetate and events written in with water soluble markers.

REFERENCE	MAJOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES	SUPPLEMENTARY INFORMATION FOR TEACHERS
	connotation as in the "Wrath of God" 3. Sun theory		Prehistoric men thought diseases were due to the invasion of the body by evil spirits. The treatment was to appease these spirits or drive them from the body. Religion has been closely associated with disease since the earliest times. The Romans associated disease with unsanitary conditions as did the ancient Hebrew Culture. These conditions led to the development of elaborate drainage systems, water sysgems and general sanitary measures to deal with the problem on a public health level.
			SEE APPENDIX C

B. Early civiliza- tion	Each of the civilizations that developed during man's history has made contributions to our understanding of the factors related to disease prevention and control.	Have pupils do some library research and report on the:
1. Roman Empire		1. Hebrew sanitary code
2. Hebrews		2. Eber Papyrus-Smith Papyrus
3. Greeks		3. Hippocrates and the Hippocratic Oath.
		Discuss how he applied the scientific procedure to the practice of medicine.

REFERENCE

MAJOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS

C. Modern Age

The discovery of micro-organisms, and the formulation of the germ theory of disease led to the development of new approaches to disease control (e.g. immunology)

SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES

Organize a panel to discuss the application of disease theories of the past to the present.

Visit a modern health department or clinic. Compare the practices with those of 100 years ago; also just 25 years ago. How are they alike? How do they differ? Make a comparison table and put on the bulletin board. Add to it as more knowledge is acquired.

SUPPLEMENTARY INFORMATION FOR TEACHERS

Specific prevention measures and practices are noted with the advent of the modern age. The discovery of bacteria led to the development of the new sciences of bacteriology, virology, and immunology. Epidemiological practices improved and research became the key to the understanding and control of disease. The cornerstone of modern medicine was laid when Pasteur in 1864 demonstrated that specific microbes caused specific diseases.

III. Modern Approaches to Disease Control

Some disease control measures are very specific (immunization), while others may be very general (sanitation).

See Strand IV - Public and Environmental Health for Details of Public Health Practices.

Visit the public health department or county laboratory. Learn how this department functions.

Discuss:

1. Why are there special clinics for the control of disease?

Many diseases can be prevented by modern measures for disease control. These measures would include:

1. Individual responsibility
2. Public prevention measures

REFERENCE

MAJOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS

SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES

2. How does the department know when to have immunization clinics?
3. How does the department cooperate with the family physician in disease control and prevention?
4. What is the function of the county laboratory?

Make a dioramic display of the community's efforts in disease control.

[SEE APPENDIX B]

A. Immunity and immunization

The body has a natural resistance to disease which may be genetically determined.

Select an appropriate filmstrip(s), from McGraw-Hill:

1. "Germ invaders"
2. "Invasion by disease"
3. "Body defenses against invasion by disease"
4. "Helping body defenses against disease"

Immunization is the process through which a person develops protection against a specific disease.

SUPPLEMENTARY INFORMATION FOR TEACHERS

3. Special cooperative measures, campaigns and activities
4. Application of research data.

The first successful artificial immunization occurred in 1796 when Edward Jenner vaccinated a young boy against smallpox. This was the first specific preventive measure against disease developed by man. The process, basically, involves the introduction of an antigen into the body which, in turn, stimulates the body to produce antibodies.

Antibodies are chemical substances that may be injected into or developed by the body. These protect the individual from contracting a specific disease for which the antibody is intended.

Immunity may be classified as specific, that is, the ability of an individual to resist a specific disease. Specific immunity is relative, not absolute.

REFERENCE

SUPPLEMENTARY INFORMATION
FOR TEACHERS

The toxins of some micro-organisms act so rapidly and are so poisonous that they take effect before the body has time to develop antibodies against them.

Active immunity is the process whereby the body develops its own antibodies, either by having the disease (natural) or when given an antigen (acquired); whereas passive immunity is the process whereby the person receives these antibodies from an outside source, as when antibodies are transferred to the newborn baby from the mother before birth (natural) or when injected directly into the body (acquired). Active immunity provides longer-lasting protection than passive immunity (measles, mumps, chicken pox). In some instances periodic reinforcement through "booster" doses is necessary.

There are, broadly speaking, two kinds of immunity:

1. Artificial in which the body is induced by artificial means (vac-

MAJOR UNDERSTANDINGS AND
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SUGGESTED TEACHING AIDS
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REFERENCE

MAJOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS

SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES

SUPPLEMENTARY INFORMATION FOR TEACHERS

ination) to build its own antibodies, or the antibodies are introduced directly by inoculation.

2. Natural in which the body develops its own antibodies through some kind of natural inducement, such as having a disease for which immunity can be developed, and recovering from it.

From Curriculum Materials Corporation:

Germs cause disease
How disease germs are spread

Build on the diorama, already begun.

The teacher may wish: (1) to leave this area entirely to Strand IV "Public and Environmental Health"; (2) to use this as a means to lead into or from Strand IV; (3) or to introduce this area as a part of the total effort to prevent and control diseases.

Much health education is going on in the home through daily practices, literature available, and the mass media, as well as the direct efforts of the parents to teach their children. Commercial

The public health department is concerned with the health of the entire community.

The health department needs the cooperation of each individual.

Since much of the prevention and control of disease is dependent upon the individual's cooperation, it is important that each person be adequately informed about disease.

B. Public health measures

1. sanitation
2. research
3. diagnostic techniques

C. Health education

1. school
2. home
3. public health education

Pupils may survey such

REFERENCE

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SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES

areas as spot announcements on T.V. or radio, school's health education program, public forums, etc.

Invite to class an executive secretary from one of the voluntary health agencies to discuss how their agency educates people about disease. Examples: American Cancer Society, TB and RD Association, American Heart Association, or the National Foundation.

product advertising is one form of health education that has a tremendous influence on health practices as well as consumer buying. It might be well to indicate to pupils that everyone's efforts are important in that they tend to reinforce each other.

SUPPLEMENTARY INFORMATION FOR TEACHERS

D. Treatments

1. general
2. drugs

Treatment for disease may vary from simple bed rest to the use of a variety of modern drugs, surgery, and radiation.

The discovery of many drugs has enabled man to control many diseases which a few years ago would have incapacitated or killed him

Some of our newest drugs are antibiotics which are "germ-killing" substances produced by living plants. Dr. Alexander Fleming is given credit for discovering the first of the antibiotic drugs, penicillin, in 1928. Since then many antibiotics have been developed--Streptomycin is the second most important antibiotic drug in this category.

Scientists continue to search the "world of molds" for substances that may be beneficial in the treatment

Invite a physician to class to discuss how new drugs have changed the treatment of disease.

Begin a "Museum of medical oddities." Include in the collection: old medicine bottles, medical books, instruments, pictures from the past, etc.

Have pupils report to the class on the discovery

REFERENCE

MAJOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS

SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES

- and use of one of the antibiotic drugs. Discuss:
1. How are they alike?
 2. How do they differ?
 3. What are their limitations?
 4. Who can buy them? Why?

SUPPLEMENTARY INFORMATION FOR TEACHERS

of disease. During the past 20 years numerous antibiotics have been identified and used for a variety of diseases. They are not, however, "cure-alls" since they have been ineffective against many diseases caused by virus agents. There is evidence, for example, that antibiotics may actually delay the recovery in the case of such diseases as the common cold, measles, mumps, and influenza. Many individuals have developed allergic reactions to some of the antibiotics. There is little doubt, because of a lack of information to the general public, as well as to the medical practitioner, that antibiotics have been too widely and indiscriminately used.

Examples of drugs would include: insulin for the control of diabetes, antibiotics for the treatment of many infectious diseases, and tranquilizers for the control of certain emotional conditions.

SUPPLEMENTARY INFORMATION FOR TEACHERS

SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES

MAJOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS

REFERENCE

An individual may not be cured of a disease, for example, diabetes, but he should be taught to "live with his disability" and function to the best of his ability.

A rehabilitation counselor may be available to discuss the many ways that individuals may be rehabilitated.

Rehabilitation is an essential part of treatment, and includes those measures that help an individual to return to his family and community as rapidly, and as healthy as possible.

The major killers 50 years ago, pneumonia, tuberculosis, influenza, diphtheria, all of which are communicable diseases, have decreased significantly. They have been replaced by such conditions as accidents, heart and circulatory diseases, cancer, and kidney diseases. Man's average life expectancy has increased so that the degenerative diseases are a greater problem than are the communicable diseases.

Make a wall-size chart of the major causes of death 50 years ago and superimpose those of today. What kinds of changes have occurred? Why?

Programs of disease prevention and control are dependent upon individuals being informed of the nature of disease.

Illness causes personal unhappiness and loss of productivity as well as financial strain on the family.

SEE APPENDIX D

3. rehabilitation

IV. Significance of Disease - It's Control and Prevention

A. To the individual

1. personal efficiency

2. longevity

B. To society

1. economics and standard of living

Disease causes incapacitation, loss of time from work and retardation in efficiency, all of which will effect the total economy.

2. progress

Programs to prevent and control diseases have

APPENDIX A

Time line to chart the key advances in man's understanding of disease and its control.
 Directions: Write in the key events that occurred the periods.

Believed diseases were caused by evil spirits

Stone Age to about 4000 B.C.

Hebrews 1500 B.C. to 500 B.C.

Sanitary Health Code

Egyptian Period 400 B.C. to 300 B.C.

First Pharmacopeia

Greece 1000 B.C. to 200 B.C.

Scientific Procedure

Roman Empire 200 B.C. to 500 A.D.

Sanitary Engineering

Middle Ages 400 to 1500

Began to seek answers to the spread of disease

Birth of Christ

Renaissance 1400 to 1700

Public Health Movement

Premodern and modern 1700 to present

Beginning Civilization

REFERENCE

3. population trends

C. To the world

MAJOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS

progressed from the incantations of the medicine man to complex programs based on:

1. research
2. sanitary engineering
3. treatment
4. rehabilitation principles

SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES

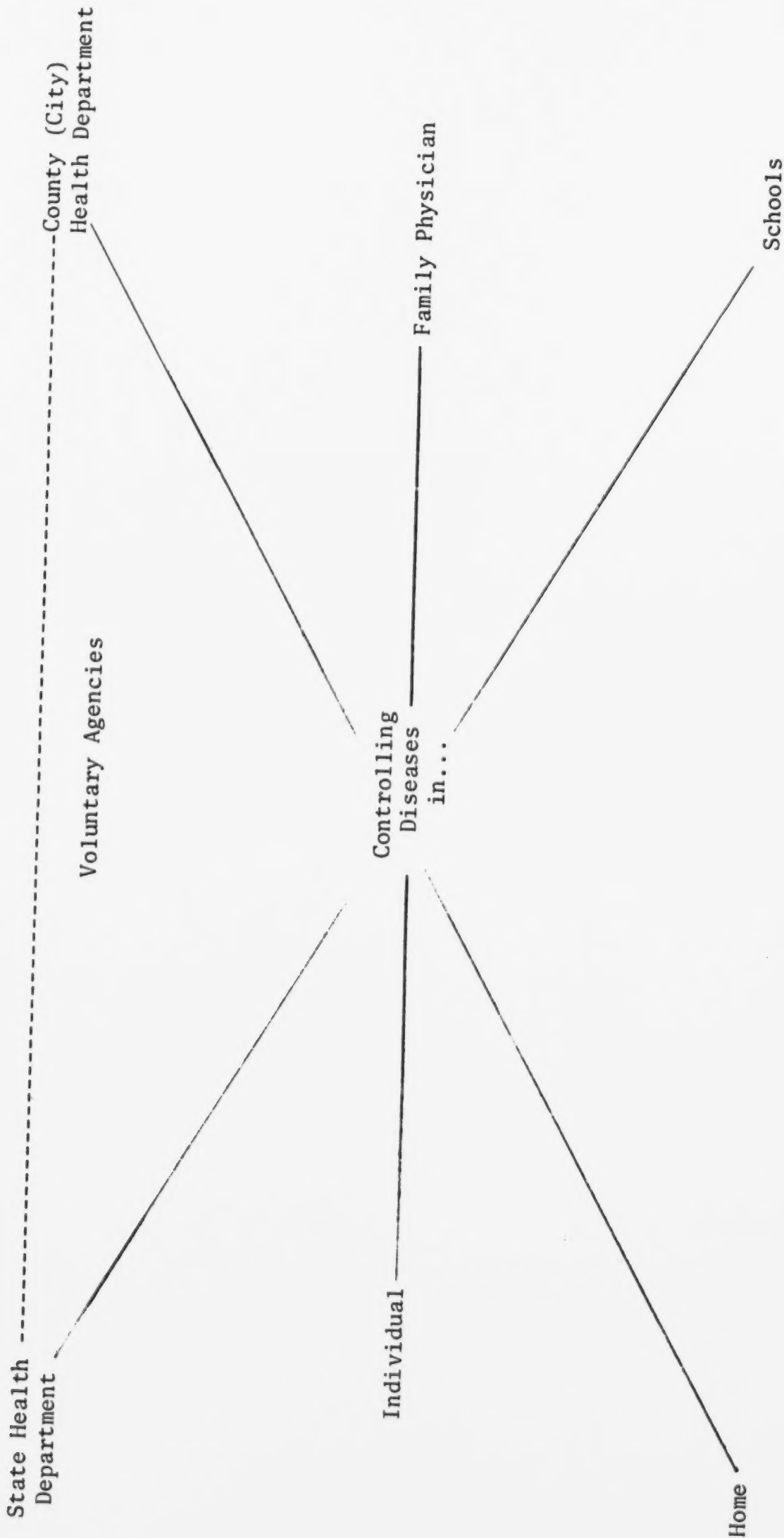
SUPPLEMENTARY INFORMATION FOR TEACHERS

APPENDIX B

World Health Organization

Federal Agencies

Diorama - Control of Disease



Directions: Obtain materials and/or build models that will represent these agencies. Through models, diagrams, and printed materials illustrate how these help or hinder the control of all diseases - communicable and noncommunicable. Place on a large table or bulletin board. Connect key activities with string or yarn.

APPENDIX C

A Brief Outline of the Development of Medicine and Public Health - Stone Age to Present

EVENT	SIGNIFICANCE
<u>Early Stone Age to Late Stone Age</u> (To about 4000 BC) Ideas: 1. Superstition - fears 2. evil spirits - malign spirits 3. demons 4. ignorance Practices: 1. magic - incantation - offerings - sacrifices - all sorts of magic rites 2. medicine men & witch doctors 3. exorcising demons 4. trephining 5. use of some drugs from herbs	1. sought the cause and treatment of disease 2. began simple surgical procedures 3. laid the foundation for group action to man's health problems 4. recognized cause and possible cure for disease
<u>Early Civilization (4000 BC to 800 BC)</u>	
<u>Egyptians (4000 BC to 1000 BC)</u>	
1. Imhotep - first physician deified - 2980 BC a. temples built in his honor b. worship cures 2. Ebers Papyrus a. 300 prescriptions b. found by G.M. Ebers - 1873 3. Smith Papyrus a. extensive account of surgical procedures and bandaging	1. first pharmacopeia 2. standard records for surgical and medical procedures 3. dressing for wounds 4. some break-away from true witch-doctor practices 5. bandaging procedures

APPENDIX C

- b. found in a tomb of a high priest - late 1800's

Hebrews (1500 BC to 500 BC)

1. Hebrew health code
2. disease due to Jehovah's wrath - prayer and sacrifice
3. forbidden to use magic and charms
4. physicians and pharmacists
5. simple surgery - dressing for wounds
6. cures instead of appealing to Jehovah

Greece (1000 BC to 200 BC)

1. emphasized a strong body and moral excellence
2. Hippocrates (Father of Medicine) 460 to 375 BC
 - a. Hippocratic Oath
 - b. diagnostic techniques
3. Empedocles 490 to 430 BC

Thought demons to be sometimes favorable and sometimes not

Roman Empire (200 BC to 500 AD)

1. Roman sanitation (Sextus Julius Frontinus)
 - a. aqueducts - public baths - running water - sewage disposal
 - b. paved streets
 - c. building codes
 - d. purity of food
2. Census

1. public sanitation
2. purity of food, clothing, etc.
3. break from pure magical cures
4. isolation measures

1. foundation to modern medical procedures - diagnostic techniques
2. laid foundation for medical ethics and purposes

3. recognized that disease did not always result
4. recognized that man develops as a whole being

1. established the basic principles for sanitary engineering
2. beginnings of community regulation of public health measures
3. many of the present day principles for public health measures were founded on Roman principles

Middle Ages (400 to 1500)

1. Black death (1348 to 1650)
 - a. Venice excludes ships from infecting ports (1374)
 - b. Marseilles established quarantine (1384)
 - c. 1630 plague killed 500,000 people in Venetian Republic
 - d. 1665 plague killed 1,000 people per week in London
2. General hygiene
 - a. sanitation directed only toward visible filth
 - b. isolation applied more strictly - but ineffective
 - c. many Greek health principles during this era (e.g., emphasis on personal hygiene)

Renaissance (1400 to 1700)

1. Public health
 - a. hospitals built for isolation
 - b. quarantine more rigid
 - c. municipal laws passed to regulate public health
2. Diseases
 - a. bacteria still unknown
 - b. theory persists that disease was bred in filth
 - c. by the end of the 14th century 12 diseases were recognized as being communicable

Pre-Modern Period (1700 to 1876)

1. Public health
 - a. boards of health established (Boston first with Paul Revere as director)
 - b. sanitary engineering
 - (1) Roman methods revived
 - (2) sewers built - first in Boston in 1833
 - (3) by 1800, 16 cities had municipal water works

1. man began to recognize the need for group action in combating disease
2. re-established the beginnings in public health practices
3. gave impetus to seeking the answers to communicable disease control

1. beginnings of man's control of disease
2. curiosity aroused anew
3. science begins to advance at a rapid pace
4. public health movement, although not underway, was stimulated

1. true public health measures taken
2. enforcement of public health practices
3. greater awareness of group action

APPENDIX C

- c. vital statistics
- 2. Diseases
 - a. immunity - 1798
 - b. bacteria discovered

Modern Period (1876 to present)

- 1. bacteria and immunology
- 2. development of public health agencies
 - a. official agencies
 - b. voluntary
- 3. specialization of medical profession
- 4. public health today
 - a. laws
 - b. vital statistics
 - c. sanitation
 - d. laboratory work
 - e. clinical work
 - f. research
 - g. education

- 1. development of new approaches
- 2. expansion of programs
- 3. expansion of the purposes and goals to include:
 - a. promotion
 - b. prevention
 - c. education
 - d. rehabilitation

APPENDIX D

Noncommunicable Diseases and Ailments

With the phenomenal reduction in deaths from communicable diseases since 1900, people are living longer and into the age range where they are more likely to be afflicted with the noncommunicable diseases. Included in this category are chronic, degenerative, or constitutional diseases. Of the 10 leading causes of death in the United States today, six are in this category, namely, diseases of the heart, cancer, stroke, arteriosclerosis, diabetes, and cirrhosis of the liver. Others that take their toll in sickness and possibly death are rheumatism, nephritis and other kidney diseases, asthma, and hay fever.

In a sense, the chronic diseases are a result of the destruction of the human body and of the gradual slowing down of its function. So it would be impossible with our present knowledge to prevent all the deaths and disabilities that they cause. However, many deaths and a great deal of incapacitation could be prevented if more people were better informed about these diseases and were willing to take precautions. These measures, in many instances, need emphasis in early childhood.

In spite of the fact that these are essentially diseases of middle and old age, children need instruction in this area. For the following reasons, this inclusion in the elementary grades is amply justified:

1. They are often the result of improper health practices that are formulated during childhood and adolescence.
2. Though they are essentially diseases of older people, chronic and degenerative diseases do afflict some children and young adults.
3. It is quite likely that school children will have indirect experience with one or more of these diseases as older relatives and/or friends become ill from them.
4. Periodic medical examinations can detect these illnesses and may prevent illness and premature loss of life.

APPENDIX E

Guidelines for independent study and class discussion:

1. Distinguish between communicable and noncommunicable disease.
2. What is an infection? How does it occur?
3. What are some common symptoms of infections?
4. What are the names of the organisms that cause infectious diseases?
Name one disease resulting from the invasion of each organism named.
5. What general defenses against disease does the body have?
Are these defenses against communicable disease only? Explain.
6. How do disease-producing agents enter the body?
7. How are germs transmitted from person to person?
8. What is the difference between body resistance to disease and immunity?
9. Distinguish between each of the following kinds of immunity:

inherent

temporary

acquired active

acquired passive

natural

artificial
10. What is a carrier?
11. How does disease control today differ from disease control 75 years ago?

Multimedia Resources

These supplementary aids have not been evaluated. The list is appended for teacher convenience only and teachers in the field are requested to critically evaluate the materials and to forward their comments to the Curriculum Development Center.

Books

- American Academy of Pediatrics. *Report of the committee on the control of communicable diseases*. P.O. Box 1034. Evanston, Illinois 60204. American Academy of Pediatrics. 1966.
- American Public Health Association. *Control of communicable diseases in man*. 10th ed. 1790 Broadway. New York 10023. APHA.
- Anderson, C.L. *School health practice*. St. Louis. C.V. Mosby Company. 1960.
- Flaurier, Noel. *The modern health book*. Minneapolis, Minnesota 55415. T. S. Dennison & Company, Inc. (Collection of plays and recitations on the health theme.)
- Haag, J.H. *School health program*. rev. ed. New York. Holt, Rinehart and Winston, Inc. 1967.
- Lee, Carvel, and Lee, Lorita. *The health bulletin board guide*. Minneapolis, Minnesota 55415. T. S. Dennison & Company, Inc.
- Wilson, C.C., M.D. ed. *School Health Services. Report of the joint committee on health problems in education*. NEA-AMA. NEA 1201 16th Street, N.W. Washington, D.C. 20036. AMA 535 N. Dearborn Street. Chicago, Illinois 63610. 1953.

Pamphlets

- Equitable Life Insurance Company. 1285 Avenue of the Americas. New York, New York.
- "Common sense about common diseases"
- "Protection against communicable diseases"
- Metropolitan Life Insurance Company. School Health Bureau. 1 Madison Avenue. New York, New York.
- "Parents...be wise--immunize!"
- "To parents about immunization"
- "Your personal health record"

National Tuberculosis Association, via local offices.

"Drugs that fight TB"

New York State Department of Health. 84 Holland Avenue. Albany, New York 12206.

"About germs"

"Infectious hepatitis"

"Measles"

"Mumps"

"Smallpox"

"The common cold"

"Triple vaccine"

"Typhoid fever"

"Whooping cough"

Prudential Insurance Company. Newark, New Jersey.

"Childhood diseases"

"Its fun to be healthy"

National Association for Retarded Children, Inc. 420 Lexington Avenue. New York, New York 10017.

"What you should know about measles and the measles vaccine"

Posters

"How to catch a cold. Series." Kimberly-Clark Corporation. Neenah, Wisconsin.

"Stop germs from spreading....keep clean." Local office. National TB Association.

"To fight germs, be sure to wash your hands." Local office. National TB Association.

Filmstrips

"Avoiding infections." Educational Record Sales.

"Be happy, be healthy." Hank Newenhouse, Inc. 1825 Willow Road. Northfield, Illinois 60093.

"Community helpers." Stanley Bowman.

"Food for good health." Encyclopedia Britannica, Inc. Wilmette, Illinois.

- "Good health and you." Society for Visual Education.
- "Health habits." Educational Record Sales.
- "How to catch a cold." Walt Disney. 800 Sonora Avenue. Glendale, California 91201.
- "The school nurse." McGraw-Hill.
- "We have you covered." Society for Visual Education.

Films

- "A community keeps healthy." Film Associates. 11559 Santa Monica Boulevard. Los Angeles, California 90025.
(For quick information, see the local Yellow Pages.)
- "Eat for health." Encyclopedia Britannica.
- "Eat well, grow well." Coronet. Coronet Building. Chicago, Illinois 60601.
- "Germs and what they do." Coronet. Coronet Building. Chicago, Illinois 60601.
- "Healthy families." Film Associates. 11559 Santa Monica Boulevard. Los Angeles, California 90025.
or Yellow Pages. (Also available through Syracuse University Film Library.)
- "How Billy keeps clean." Coronet. Coronet Building. Chicago, Illinois 60601.
- "How to catch a cold." New York State Film Library. 84 Holland Avenue. Albany, New York 12206.
- "I never catch a cold." Coronet. Coronet Building. Chicago, Illinois 60601.
- "Joan avoids a cold." Coronet. Coronet Building. Chicago, Illinois 60601.
- "Kitty cleans up." Mc-Graw - Hill.
- "Let's keep food safe to eat." Coronet. Coronet Building. Chicago, Illinois 60601.
- "Sleep for health." Encyclopedia Britannica.
- "Your friend the doctor." Coronet. Coronet Building. Chicago, Illinois 60601.

Film for teachers: "Things a teacher sees." International Film Bureau, Inc. 332 South Michigan Avenue.
Chicago, Illinois 60604.